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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,699	04/02/2004	Hisaya Shimizu	056208.53953US	9741

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EXAMINER	
WALTERS, JOHN DANIEL	
ART UNIT	**PAPER NUMBER**
3618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,699	SHIMIZU ET AL.	
	Examiner	Art Unit	
	John D. Walters	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,8,11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,8,11 and 13-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20061115*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 4, 8, 11 and 13 – 21 have been examined. Claims 1 – 3, 5 – 7, 9, 10 and 12 have been cancelled by Applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 8, 11 and 14 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yutaka (JP2002-21861) in view of Walters et al. (JP2002-142310). Yutaka discloses a regenerative brake system comprising:

- a vehicle drive train system (Fig. 1);
- a motorized machine, i.e. motor-generator which drives wheels (Fig. 1, item 3 & paragraph 11);
- wherein said motorized machine has a regenerative function for converting mechanical energy into electric energy during regenerative braking (paragraph 6);
- an engine which drives wheels not driven by said motorized machine (Fig. 1, item 1);

- wherein a unit, i.e. drive train system, is detachably attached to the vehicle (inherent in automotive construction, i.e. engine and drive train components are removable for servicing and/or replacement);
- said unit being attached to a differential gear (Fig. 1, item 10);
- a capacitor device (paragraph 12);
- a translator for electric power (Fig. 1, item 5);
- a controller (Fig. 1, item 5a);
- a brake (Fig. 1, item 8);
- said capacitor device comprising a battery and a capacitor (paragraph 12).

In regards to claims 8, 11, 14 and 19 – 21 it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine known components into as many or as few "integrated" units as dictated by manufacturing or assembly ease or size requirements. Integration of components has been held to be an obvious variation, see *In re Larson*, 340 F.2d 965, 967, 144 USPQ 347, 349 (CCPA 1965). Additionally, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to configure know components in an orientation appropriate for a vehicle's component packaging areas, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

In regards to claim 11, it is well known in the art to make use of brakes being powered by either hydraulic or electric power. Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to make use of an

electrically power brake system as this would allow for fewer components as electric power can be provided by said motor-generator and no hydraulic components would be required.

Yutaka does not disclose an electrically separate engine and motor/generator. Walters, however, discloses a motor torque controller comprising:

- a motor-generator which is electrically separate of an engine (Fig. 1 and paragraphs 9 and 10).

It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to combine the electrical system of Walters with the regenerative system of Yutaka in order to make use of smaller components which would lower vehicle weight and simplify the manufacturing process.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yutaka (JP2002-21861) in view of Walters et al. (JP2002-142310), as applied to claims 4, 8, 11 and 14 – 21, and further in view of Morisawa et al. (6,484,832). Yutaka in view of Walters discloses a regenerative brake system as described above. Yutaka in view of Walters does not directly specify the use of an inverter. Morisawa, however, discloses an apparatus for controlling an automotive vehicle comprising:

- an inverter (Fig. 1, item 50);
- a device which increases and decreases voltage between said inverter and a capacitor device (Fig. 1, item 46 & column 10, line 64 to column 11, line 3).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to make use of the inverter of Morisawa in the system of Yutaka in view of Walters in order to allow for the conversion of power into an appropriate form.

Response to Arguments

Applicant's arguments with respect to claims 1 – 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Morisawa et al. (2002/0023789) disclose a hybrid vehicle;
- Yamaguchi et al. (6,488,608) disclose a hybrid vehicle;
- Arai (6,435,296) discloses a torque detector and controls;
- Ellers (4,923,025) discloses a hybrid electric/ICE vehicle drive system;
- Gardner (5,346,031) discloses a hybrid motor vehicle having an electric motor;
- Morisawa et al. (5,984,034) disclose a hybrid vehicle;
- Nagano et al. (6,059,064) disclose a hybrid vehicle;
- Tabata (6,540,642) discloses a vehicle control system and vehicle control method;
- Kenyon (4,438,342) discloses a novel hybrid electric vehicle;

- Aikawa et al. (2002/0019284) disclose a power transmission system and operation method therefore;
- Moore (6,306,056) discloses a dual engine hybrid electric vehicle;
- Hoshiya et al. (6,383,114) disclose a hybrid vehicle control apparatus.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

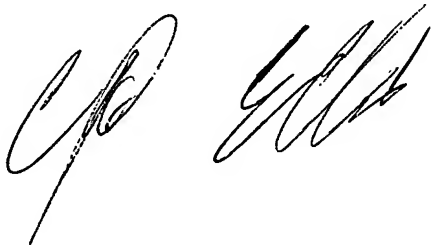
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John D. Walters whose telephone number is (571) 272-8269. The examiner can normally be reached on Monday - Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John D. Walters
Examiner
Art Unit 3618

JDW



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